

IN THE CLAIMS:

Please amend Claims 1-27, as follows:

1. (Currently Amended) A color display element comprising a unit pixel which is comprised of a plurality of sub-pixels comprising a first sub-pixel and a second sub-pixel having a color filter and a medium which has an optical property modulated in accordance with a voltage applied to each of the sub-pixels and is located in each of the sub-pixels, wherein ~~using a medium having optical properties modulated by an external modulation means,~~

~~characterized in that said medium has a brightness modulation range where a brightness is changed by said modulation means and a color modulation range where a color is changed by said modulation means;~~

the color display element has a means of applying to the first sub-pixel a voltage which modulates an optical property of the medium located in the first sub-pixel in a range within which a brightness of light passing through the medium is variable and in a range within which a chromatic color assumed by light passing through the medium changes, and a means of applying to the second sub-pixel a voltage which modulates an optical property of the medium located in the second sub-pixel in a range within which a brightness of light passing through the medium is variable ~~unit pixel comprised of a plurality of sub-pixels including a first sub-pixel and a second sub-pixel having a color filter, and~~

~~said modulation means gives modulation of said color modulation range to the first sub-pixel to display colors within the color modulation range, and gives modulation of said brightness modulation range to the second sub-pixel to display brightness of the color of said color filter within the brightness modulation range, whereby provides a color display.~~

2. (Currently Amended) The color display element according to claim 1, wherein the color filter of the second sub-pixel is comprised of a green color filter ~~said second sub-pixel has a green color filter.~~

3. (Currently Amended) The color display element according to claim 2, wherein the range within which the color changes is a color range of red, blue and colors between them ~~1, wherein a modulation range of said first sub-pixel is comprised of the color modulation range which is chromatic color.~~

4. (Currently Amended) The color display element according to claim 2, wherein a voltage making the light passing through the medium assume magenta intermediate between red and blue is applied to the first sub-pixel, and a voltage making the light passing through the medium has a maximum brightness in the range within which a brightness of the light is variable is applied to the second sub-pixel, whereby the unit pixel displays white color ~~3, wherein a modulation range of said first sub-pixel includes red and blue colors and an intermediate color between the red and blue colors.~~

5. (Currently Amended) The color display element according to claim 1, wherein the first sub-pixel has a color filter of a color complementary to a color of the color filter of the second sub-pixel ~~said modulation means further gives modulation of the brightness modulation range to said first sub-pixel.~~

6. (Currently Amended) The color display element according to claim 5, wherein the color filter of the second sub-pixel assumes green, and the color filter of the first sub-pixel assumes magenta ~~1, wherein said first sub-pixel is comprised of sub-pixels~~

having different areas, and a halftone is displayed with the area of sub-pixels showing a color.

7. (Currently Amended) The color display element according to claim 5, wherein a voltage in the range within which the color changes is applied to the first sub-pixel, to display a color as a result of overlapping the chromatic color and a color of the complementary color filter with each other 1, ~~wherein said second sub-pixel has at least a green color filter and said first sub-pixel has a color filter of color complementary to the green color.~~

8. (Currently Amended) The color display element according to claim 5, wherein a voltage making the lights passing through the mediums have a maximum brightness in the range within which a brightness of the light is variable is applied to the first and second sub-pixels, whereby the unit pixel displays white color 7, ~~wherein said modulation means further gives a modulation of the brightness modulation range to said first sub-pixel.~~

9. (Currently Amended) The color display element according to claim 5, wherein modulations of a same gray level in the range within which a brightness of the light is variable are applied to the first and second sub-pixels respectively, whereby an achromatic color of half tone is displayed in the unit pixel 8, ~~wherein said second sub-pixel is comprised of a plurality of sub-pixels, one of the plurality of sub-pixels has a green color filter, and the others have color filters of at least one of red and blue colors.~~

10. (Currently Amended) The color display element according to claim 2, wherein the second sub-pixel is comprised of two or more of sub-pixels, at least one of

~~which sub-pixels has a red color filter or a blue color filter 9, wherein said first sub-pixel is comprised of sub-pixels having different areas, and a halftone is displayed with the area of sub-pixels showing a color.~~

11. (Currently Amended) A The color display element comprising at least one polarizing plate, a pair of substrates opposite to each other in which an electrode is formed, and a liquid crystal layer located between the substrates, wherein the retardation of the liquid crystal layer is variable according to a voltage applied to the electrode, and a unit pixel of the color display element is comprised of a plurality of sub-pixels comprising a first sub-pixel wherein the retardation of the liquid crystal layer is modulated according to the voltage applied to the electrode in a range within which a brightness of light passing through the liquid crystal layer is variable and in a range within which a chromatic color assumed by light passing through the liquid crystal layer changes and a second sub-pixel having a color filter wherein the retardation of the liquid crystal layer is modulated according to the voltage applied to the electrode in a range within which a brightness of light passing through the liquid crystal layer is variable according to claim 10, wherein the areas of said sub-pixels having color filters of at least one of red and blue colors are substantially equal to or smaller than the area of the smallest sub-pixel of sub-pixels comprising said first sub-pixel.

12. (Currently Amended) The color display element according to claim 11, wherein a liquid crystal of the liquid crystal layer is orientated in a direction almost perpendicular to the substrate when the voltage is not applied and inclines the orientation from the almost perpendicular state in accordance with an application of the voltage 1; characterized in that a plurality of metal films are placed at least on a substrate, the color display element has a capability of changing a tone of interference color by modulating a

~~gap distance being a thickness of air as a medium for the metal films and the substrate, and at least one of said plurality of sub-pixels is comprised of a first sub-pixel capable of providing color display based on a change in color according to a change in interference color associated with a change in gap distance, and a second sub-pixel having a color filter layer.~~

13. (Currently Amended) The color display element according to claim 11, wherein an orientation of a liquid crystal of the liquid crystal layer varies over a range between a bend orientation and an almost perpendicular orientation in accordance with an application of the voltage V_1 , characterized in that a plurality of particles as a medium are moved by application of a voltage, and

~~at least one of said plurality of sub-pixels is comprised of a first sub-pixel including at least two drive electrodes and at least two types of particles having mutually different particle migration characteristics and colors, and a second sub-pixel having a color filter layer.~~

14. (Currently Amended) The color display element according to claim 11, wherein a thickness of a cell of the second sub-pixel is smaller than that of the first sub-pixel V_3 , characterized in that said first sub-pixel comprises two display electrodes situated in such a manner that one is almost superimposed on another when viewed by an observer, two collect electrodes, and two types of particles having mutually different particle migration characteristics and colors and at least one of which is pervious to light, and includes a drive means capable of forming a state in which the two types of particles all collect on the collect electrodes or are all placed on the display electrodes, or a state in which one type of particles are placed on the display electrodes and the other type of particles collect on the collect electrodes, or an intermediate state.

15. (Currently Amended) The color display element according to claim 11, wherein the unit pixel is comprised of a third sub-pixel having a color filter, the first and second sub-pixels have a region reflecting light respectively, and the third sub-pixel has a region which transmits a light from the rear through the color filter 14, characterized in that the combination of colors of the two types of particles in said first sub-pixel is a combination of blue and red.

16. (Currently Amended) The color display element according to claim 15, wherein the third sub-pixel is a sub-pixel wherein the retardation of the liquid crystal layer is modulated according to the voltage applied to the electrode in a range within which a brightness of light passing through the liquid crystal layer is variable 14, wherein the color of particles for use in said second sub-pixel is black.

17. (Currently Amended) ~~The~~ A color liquid crystal display element according to claim 16, wherein a thickness of a liquid crystal layer in the light-transmitting region of the third sub-pixel is smaller than twice the thickness of the liquid crystal layers in the light-reflecting regions of the first and second sub-pixels using a liquid crystal layer having optical properties changed by application of a voltage,

characterized in that said color display element comprises at least one polarizing plate, a pair of substrates provided with electrodes and so situated as to face each other, and a liquid crystal layer placed between the substrates, and has a capability of modulating incident polarized light into a desired polarized state by retardation of the liquid crystal layer;

a unit pixel of said color display element is comprised of a plurality of sub-pixels, and

~~said plurality of sub-pixels include a first sub-pixel changing retardation of the liquid crystal layer by application of a voltage to display a chromatic color, and a second sub-pixel having a color filter, and changing retardation in an achromatic area brightness modulation range by a voltage to display a color of the color filter.~~

18. (Currently Amended) The color liquid crystal display element according to claim 17, wherein the thickness of the liquid crystal layer of the light-reflecting region is equal to the thickness of the liquid crystal layer of the light-transmitting region, and makes it possible to modulate the retardation in a range from 0 nm to 300 nm liquid crystal molecules of said liquid crystal are almost perpendicularly oriented to the substrates when no voltage is applied, and incline against the almost perpendicular orientation when a voltage is applied, to change the retardation.

19. (Currently Amended) The color liquid crystal display element according to claim 15, wherein the third sub-pixel is composed of three sub-pixels having red, green and blue color filters respectively 17, wherein the liquid crystal molecule changes the orientation in a range of state between a bend orientation and the almost perpendicular orientation through an application of voltage, to change the retardation.

20. (Currently Amended) The color liquid crystal display element according to claim 19, wherein each of the three sub-pixels is a sub-pixel in which the retardation of the liquid crystal layer is modulated according to the voltage applied to the electrode in a range within which a brightness of light passing through the liquid crystal layer is variable 17, characterized in that a cell thickness d_1 in said first sub-pixel and a cell thickness d_2 in said second sub-pixel satisfy the relation of $d_1 > d_2$.

21. (Currently Amended) A method for driving a color display element which contains a medium an optical property of which changes in accordance with an applied voltage, the element being comprised of a unit pixel comprised of a plurality of sub-pixels comprising a first sub-pixel and a second sub-pixel having a color filter, which comprises the steps of:

applying to the first sub-pixel a voltage modulating an optical property of the medium in a range within which a brightness of light passing through the medium is variable and in a range within which a chromatic color assumed by light passing through the medium changes, and

applying to the second sub-pixel a voltage modulating an optical property of the medium in a range within a brightness of light passing through the medium is variable
~~The color liquid crystal display element according to claim 17, wherein said first sub-pixel and said second sub-pixel have a light reflection means to form a reflection display area, and said unit pixel further includes a transmission display area comprised of a third sub-pixel, through which at least part of light from the back surface passes.~~

22. (Currently Amended) A color display apparatus comprising a unit pixel which is comprised of a plurality of sub-pixels comprising a first sub-pixel and a second sub-pixel having a color filter, at each of which sub-pixels a means of applying a voltage and a medium which has an optical property modulated in accordance with a voltage applied by the means are located, wherein

the means of applying the voltage is comprised of a means of applying to the first sub-pixel a voltage which modulates an optical property of the medium in a range within which a brightness of light passing through the medium is variable and in a range within which a chromatic color assumed by light passing through the medium changes, and a means of applying to the second sub-pixel a voltage which modulates an optical property

of the medium in a range within which a brightness of light passing through the medium is variable ~~The color liquid crystal display element according to claim 21, wherein said third sub-pixel is divided into three sub-pixels provided with red, green and blue color filters, respectively.~~

23. (Currently Amended) A color display apparatus comprising a unit pixel which is comprised of a first sub-pixel having a light-reflective surface, a second sub-pixel having a light-reflective surface and a color filter and a third sub-pixel having a color filter which sub-pixel transmits a light from the rear through the color filter, a means of applying a voltage to each of the sub-pixels and a medium which has an optical property modulated in accordance with the applied voltage, wherein

the means of applying a voltage to each of the sub-pixels is comprised of a means of applying to the first sub-pixel a voltage which modulates an optical property of the medium in a range within which a brightness of light passing through the medium is variable and in a range within which a chromatic color assumed by light passing through the medium changes, and a means of applying to the second and third sub-pixels respective voltages which modulate an optical property of the medium in a range within which a brightness of light passing through the medium is variable ~~The color liquid crystal display element according to claim 22, wherein said third sub-pixel changes retardation in an achromatic area with a voltage to display the color of each color filter.~~

24. (Currently Amended) The color display apparatus according to claim 23, the means of applying voltages to the first through third sub-pixels are respectively comprised of an electrode and an active matrix substrate on which gate lines, source lines and TFTs are located, the odd number gate lines being connected to the electrodes of the first and second sub-pixels through the TFT, and the even number gate

lines being connected to the electrode of the third sub-pixel through the TFT A method for providing color display using a color display element;

characterized in that a color display element is formed using a medium having a color modulation range where a color is modulated by external modulation means, and a brightness modulation range where a brightness of a color is modulated by said modulation means;

a unit pixel of said color display element is divided into a first sub-pixel and a second sub-pixel having a color filter, and said first sub-pixel is made to display chromatic colors within said color modulation range, and

said second sub-pixel is made to display a brightness of a color of said color filter within the brightness modulation range, whereby color display is provided.

25. (Currently Amended) The color display apparatus according to claim 23, wherein the first sub-pixel is comprised of two sub-pixels, and the third sub-pixel is comprised of three sub-pixels having red, green and blue color filters respectively The method according to claim 24, wherein the second sub-pixel has a green color filter.

26. (Currently Amended) The color display apparatus according to claim 25, wherein the three sub-pixels in the third sub-pixel are located adjacent to the second sub-pixel and the two sub-pixels of the first sub-pixel, respectively method according to claim 24, wherein a color display device in which the second sub-pixel has at least a green color filter and the first sub-pixel has a color filter of color complementary to the green color is used; a modulation of the brightness modulation range is given to the second sub-pixel to change a brightness of the green color; a modulation of the color modulation range is given to the first sub-pixel to display a chromatic color; and a

modulation of the brightness modulation range is given, to change a brightness of the color complementary to the green color.

27. (Currently Amended) The color display apparatus according to claim 26, wherein the first sub-pixel has a color filter of a color complementary to a color of the color filter of the second sub-pixel, and the sub-pixel of the third sub-pixel which is adjacent to the second sub-pixel has a color filter of a same color as of the color filter of the second sub-pixel ~~method according to claim 26, wherein said first sub-pixel is divided into a plurality of sub-pixels having different areas to make the sub-pixels display the chromatic color and to make the others carry out the displaying of changing the brightness, whereby a halftone of said color complementary to the green color is displayed.~~

Claims 28 and 29 (Cancelled).